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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to the waste fluid regenerative apparatus and the waste fluid playback approach of a printing machine that single equipment separates three components, in the system in which three components of the ink pigment charged especially, an insulating penetrant remover, and conductive water were intermingled about the equipment and the approach of reproducing the waste fluid which comes out at the time of washing of the component part of the printing machine to which ink, such as a blanket drum of a printing machine, adheres.
[0002]
[Description of the Prior Art] Although waste fluid comes out at the time of washing of the blanket drum of a printing machine, or an impression cylinder, in consideration of earth environment, the motion which performs and discards a certain processing in this waste fluid is increasing. In this case, when the cost (abandonment cost) to abandonment processing starts, since a lot of penetrant removers are used for washing a blanket drum etc., a running cost will increase.
[0003] Then, waste fluid was recently reworked and the attempt in which a penetrant remover would be reused also came out. The example is called sedimentation method and drawing 10 shows the outline configuration of the waste fluid regenerative apparatus used with a sedimentation method. As shown in drawing 10 , the conventional waste fluid regenerative apparatus 51 is equipped with the container 53 which collects the washing waste fluid (waste fluid) 52, the pars-basilaris-ossis-occipitalis discharge piping 54 is connected to the bottom wall of this container 53, and the flank discharge piping 55 is connected to the side attachment wall of a container 53. Furthermore, the container 56 for concentration waste fluid recycling is arranged in the outlet lower part of the pars-basilaris-ossis-occipitalis discharge piping 54 among these discharge piping 54 and 55, and the container 57 for playback penetrant remover recycling is arranged in the outlet lower part of the flank discharge piping 55. Moreover, the closing motion bulb 58 is connected to the path of one pars-basilaris-ossis-occipitalis discharge piping 54, the closing motion bulb 59 is connected to the upstream, and the filter 60 is arranged in the path of the flank discharge piping 55 of another side by the downstream.
[0004] Thus, the ink pigment 61 is made to sediment at the pars basilaris ossis occipitalis of a container 53 in the constituted waste fluid regenerative apparatus 51 by accumulating the waste fluid 52 after washing the blanket drum of a printing machine etc. in a container 53, and adding the drugs which promote sedimentation of the ink pigment (it is also only called a pigment) 61 in waste fluid 52. Subsequently, the ink pigments 63 which sedimented, i.e., concentration waste fluid, are collected from the pars-basilaris-ossis-occipitalis discharge piping 54 in the container 56 for concentration waste fluid recycling, and by filtering the supernatant of waste fluid 52 with a filter 60 from the flank discharge piping 55, the ink pigment 61 is removed and it collects in the container 57 for playback penetrant remover recycling. In this way, the obtained penetrant remover 62 will be reused.
[0005] However, sedimentation of the ink pigment 61 was inadequate, and this approach of the purity of a playback penetrant remover is not only insufficient, but since the filter 60 carried out blinding immediately depending on the combination of ink and a penetrant remover, the technical problem that exchange or cleaning of a filter 60 had to be performed frequently occurred. On the other hand, in the field of electrophotography, the wet-developing method which the electrification toner distributed in the solvent is made to adhere to an electrostatic latent image by electrophoresis, and visualizes it is also adopted partly. In this system, the method which removes electrically the toner particle charged from the waste fluid after cleaning is also proposed (JP,53-10440,A).
[0006] Moreover, the reference (others [Kuro-shima]: Japan Hardcopy'96 collected works, p153 (1996)) in which the same applicant made a society announcement recently is shown the toner particle stripper similar to the equipment of this invention.
[0007]
[Problem(s) to be Solved by the Invention] However, with above conventional techniques of an official report or techniques of society announcement reference, when conductive water mixes, it is not assumed. For example, although moisture is separated by the above-mentioned society announcement reference using the difference in the specific gravity of carrier liquid and water when water is contained in the collected carrier liquid, it is inevitable big equipment is not only required of this method, but that separation takes long time amount.
[0008] Then, in the invention process of the invention in this application, it was efficient, and as the penetrant remover could be reproduced, the waste fluid regenerative apparatus and the waste fluid playback approach of a printing machine of an electrostatic-field use method were originated for the purpose of aiming at reduction of the running cost concerning washing of the abandonment cost of washing waste fluid, or a printing machine, as a result improvement in the productivity of a printing machine. This electrostatic-field use method is a method which uses the electrophoresis of the pigment by electrostatic field for playback of the waste fluid containing the ink pigment used with the printing machine, water, and a penetrant remover.
[0009] In playback of an ink pigment, water, and the waste fluid containing three components of a penetrant remover (insulating thing), the waste fluid playback principle of this method carries out the electrostatic condensation of the water, while generating electrostatic field and carrying out electrophoresis of the ink pigment in waste fluid into waste fluid, and it separates an ink pigment, water, and a penetrant remover. That is, although water 9, the ink pigment 61, and the penetrant remover 62 are intermingled in the waste fluid 11 supplied in the container as shown in drawing 6 (a) The electrode plates 3 and 4 are installed in the side 1 in such waste fluid 11, and else, the electrode plate 3 carries out a touch-down ground, and it is a ground electrode (here). Since a ground electrode is tabular, if it supposes hereafter that it is also called a ground electrode plate and the seal of approval of the high voltage is carried out to the electrode plate 4, the electrode

plate 4 will become + pole, the electrode plate 3 will become - pole, and electric field will occur between the electrode plate 3 and 4. By this, as shown in drawing 6 (b), the electrophoresis of the ink pigment 61 in waste fluid 11 and electrostatic condensation of water 9 start, and water 9 and the ink pigment 61 move separately, respectively, and are separated.

[0010] As a reaction in electric field follows for progressing (that is, the condition of generating electrolysis being continued for a long time), it dissociates completely and water 9 and the ink pigment 61 are shown in drawing 6 (c), water 9 is condensed to a group and sediments at the pars basilaris ossis occipitalis with gravity. Moreover, the ink pigment 61 of + charge adheres to the ground electrode plate 3 which is - pole. Water 9 and the ink pigment 61 dissociate from a penetrant remover 62 completely by this, and the beautiful penetrant remover 62 (namely, washing regenerant 26) is obtained.

[0011] The typical sectional view which drawing 7 - drawing 9 show the waste fluid regenerative apparatus of the printing machine originated in the invention process of the invention in this application using such a principle, and looked at drawing 7 from [of the typical top view of the waste fluid reservoir container and its waste fluid reservoir container] the side face, drawing 8 , and drawing 9 are the typical sectional views explaining the actuation. As shown in drawing 7 (a) and (b), in the waste fluid regenerative apparatus of this printing machine, the tabular ground ground electrode plate 20 is arranged in an abbreviation horizontal by the lower part in the waste fluid reservoir container 2, and the metal-electrode plates 30a and 30b are arranged above this ground electrode plate 20 in a container 2 by the abbreviation horizontal. The ground electrode plate 20 is connected to a ground 8, and the electrode plates 30a and 30b are connected to the high-voltage power source 7 through voltage overloads 7a and 7b which are mutually different so that the seal of approval of the respectively separate electrical potential difference can be carried out.

[0012] Moreover, 1 side-attachment-wall 2b in a container 2 is approached, a bridge wall 19 is arranged, and the field divided with this bridge wall 19 and 1 side-attachment-wall 2b is constituted as waste fluid injection section 2A which throws in waste fluid 11. The metal-electrode plates 30a and 30b counter this bridge wall 19 and 1 side-attachment-wall 2b in a container 2, and also are arranged through Insulators 31c and 31d, respectively between side-attachment-wall 2c. In addition, the ground electrode plate 20 is formed so that the whole pars basilaris ossis occipitalis in a container 2 may be covered.

[0013] Therefore, although the inside of a container 2 is divided into three fields, the 1st field a, the 2nd field b, and the 3rd field c, toward the upper part with the electrode plates 30a and 30b from the lower part, since the electrode plates 30a and 30b consist of wire gauze-like metal-electrode plates, circulation of waste fluid 11 is attained between each field of a, b, and c. Moreover, waste fluid injection section 2A by the side of 1 side-attachment-wall 2b in a container 2 constitutes a part of 1st field a.

[0014] The 1st recovery hole 27 for collecting the reproduced penetrant removers 62 is formed in the 3rd field c of the upper part in a container 2, and the 2nd recovery hole 36 for collecting the ink pigments 61 and water 9 which were separated from the penetrant remover 62 is formed in the 1st field a of the lower part in a container 2. By such configuration, as shown in drawing 8 , the washing waste fluid 11 is thrown in in a container 2 from waste fluid injection section 2A, waste fluid 11 is put in to the location shown by two-dot chain line e, and waste fluid 11 is further supplied in a container 2 from waste fluid injection section 2A. The supplied waste fluid enters and goes to the 2nd field (processing layer) b along the direction of an arrow head Y. Here, waste fluid 11 is impressed with the impression electrode plates 30a and 30b, and is divided into water 9, the ink pigment 61, and a penetrant remover 62. The penetrant remover 62 which was separated and was reproduced finely is stored by the 3rd field (processed layer) layer c of the container 2 upper part.

[0015] Since it is prepared at this time so that waste fluid injection section 2A may lead to the 1st field (injection layer) a, separation of the penetrant remover 62 from waste fluid 11, water 9, and the ink pigment 61 can be performed more smoothly. On the other hand, the separated water 9 sediments in the container 2 lower part, and is stored by the 1st field a of the right above section of the ground electrode 20. Here, this water 9 very thing serves as a ground, the ink pigment 61 is made to condense and adhere near the interface of water 9, and as a result, the separated ink pigment 61 will adhere to the front face of water 9, and will be stored.

[0016] It goes up to the location which only the part which supplied waste fluid 11 increase-izes the penetrant remover 62 in a container 2, for example, shows to drawing 8 by two-dot chain line f. Consequently, the penetrant remover reproduced finely is recoverable from a pipe 29 through the recovery hole 27 to the bulb 28. Thus, if recovery of the penetrant remover 62 by separation to the water 9 of waste fluid 11, the ink pigment 61, and a penetrant remover 62 is continued and it passes for a long period of time, as shown in drawing 9 , a lot of water 9 will be stored by the upper part of the ground electrode 20. Moreover, the separated ink pigment 61 adheres to the front face of this water 9 in large quantities.

[0017] Thus, if it is used for a long period of time and the ink pigment 61 and water 9 store, it is necessary to carry out the cast away of these from a container 2, and with this operation gestalt, water 9 and the ink pigments 61 will be collected from the recovery hole 36 out of a container 2 to coincidence through a bulb 37 and a pipe 38, and the cast away of these will be carried out. According to the waste fluid regenerative apparatus and the waste fluid playback approach of such a printing machine, the ink pigment 61 which was separated from waste fluid 11 and stored Since it can discard easily with water 9, the equipment about abandonment becomes unnecessary. And although it becomes almost unnecessary [the cautions time amount about abandonment of the ink pigment 61] since it can exhaust in a short time and operation cost can also be made cheap, and the ink pigment 61 and water 9 which were separated do not dissolve in a penetrant remover 62 even if they carry out prolonged neglect (one years or more) Amelioration is variously more nearly required still to raise practicality.

[0018] This invention is efficient, and as a penetrant remover can be reproduced, reduction of the running cost concerning washing of the abandonment cost of washing waste fluid or a printing machine, as a result improvement in the productivity of a printing machine can be aimed at, it was originated in view of the above-mentioned technical problem, and it aims at offering the waste fluid regenerative apparatus and the waste fluid playback approach of a printing machine that practicality is moreover more high.

[0019]

[Means for Solving the Problem] In order to attain this purpose, the waste fluid regenerative apparatus (claim 1) of the printing machine of this invention The waste fluid reservoir container which is the waste fluid regenerative apparatus which reproduces the ink pigment used with the printing machine, water, and the waste fluid containing a penetrant remover, and stores this waste fluid, The waste fluid playback container which adjoins this waste fluid reservoir container, is prepared, and reproduces this waste fluid, The high-voltage power source which is arranged in this waste fluid playback container, and carries out the seal of approval of the electrical potential difference to the metal-electrode plate which can be circulated and this metal-electrode plate of this waste fluid, The container for water recycling which collects the reclaimed water which was prepared caudad, was separated from this metal-electrode plate in this waste fluid playback container within this waste fluid playback container, and sedimented, The ground electrode connected to this container for water recycling, and the regenerant reservoir container which collects the regenerant which is a playback penetrant remover which adjoined this waste fluid playback container, was prepared, and was separated within this waste fluid playback container, The filtration container which was

arranged under this container for water recycling, and offered the ink pigment recovery filter on the interior, The recycled water reservoir container which is arranged under this container for water recycling, and stores the reclaimed water in this container for water recycling is offered. It is characterized by dividing this waste fluid into this regenerant, this reclaimed water, and this ink pigment using the electrostatic field between this ground lateral electrode and this metal-electrode plate by using this ground electrode in this container for water recycling, and the reclaimed water to energize as a ground lateral electrode.

[0020] It is desirable that the closing motion valve which drops the ink pigment stored in the reclaimed water front face in this container for water recycling in this filtration container with this reclaimed water, this waste fluid, and this regenerant is infixed between this container for water recycling and this filtration container (claim 2). It is desirable that the return passage of this regenerant of the above-mentioned regenerant reservoir container, this recycled water reservoir container, and this filtration container collected with one of containers at least, this reclaimed water, and this waste fluid which returns either to this waste fluid reservoir container at least is prepared (claim 3).

[0021] Moreover, it is desirable that this container for water recycling is formed in the shape of a funnel (claim 4). Moreover, it is desirable that antifouling processing to which this container for water recycling prevents adhesion of this ink pigment inside is performed (claim 5). Furthermore, it is desirable that this metal-electrode plate is arranged horizontally (claim 6). Moreover, the waste fluid regenerative apparatus (claim 7) of the printing machine of this invention The waste fluid playback container which reproduces the waste fluid supplied to the interior, and the metal-electrode plate in which it is arranged in this waste fluid playback container, and circulation of this waste fluid is possible, and a seal of approval is carried out by the high-voltage power source in an electrical potential difference, The container for water recycling which collects the reclaimed water which was prepared caudad, was separated from this metal-electrode plate in this waste fluid playback container within this waste fluid playback container, and sedimented, The waste fluid regenerative apparatus which has the ground electrode connected to this container for water recycling is used. Are the waste fluid playback approach which reproduces the ink pigment used with the printing machine, water, and the waste fluid containing a penetrant remover, and this ground electrode in this container for water recycling and the reclaimed water to energize are used as a ground lateral electrode. It is characterized by forming electrostatic field between these metal-electrode plates in which the seal of approval was carried out to this ground lateral electrode by this high-voltage power source in the electrical potential difference, and for this electrostatic field separating this waste fluid into this regenerant, this reclaimed water, and this ink pigment, and collecting this regenerant and this reclaimed water which were separated, and these ink pigments, respectively.

[0022] It is desirable to reuse the separated above-mentioned regenerant and reclaimed water (claim 8).

[0023]

[Embodiment of the Invention] Hereafter, a drawing explains the gestalt of operation of this invention. First, when the 1st operation gestalt of this invention is explained, the typical sectional view which drawing 1 - drawing 4 show the waste fluid regenerative apparatus and the waste fluid playback approach of a printing machine concerning the 1st operation gestalt of this invention, and looked at drawing 1 from [of the waste fluid reservoir container] the side face, drawing 2 - drawing 4 are the typical sectional views showing the waste fluid renewal process.

[0024] The waste fluid regenerative apparatus of the printing machine concerning this operation gestalt is the same as that of what originated in the invention process of this invention theoretically explained with reference to drawing 6 - drawing 9 , and the electrostatic-field use method is used for it. As shown in drawing 1 , in the waste fluid regenerative apparatus 40 of this printing machine In the waste fluid regenerative apparatus 40 of the printing machine concerning this operation gestalt In the sheathing case 41, the waste fluid tank (waste fluid reservoir container) 80 and the playback tank 75 (waste fluid playback container), The tank 90 for water recovery (container for water recycling), the regenerant tank (regenerant reservoir container) 70, the recycled water tank (recycled water reservoir container) 91, and the filtration tank (filtration container) 101 are offered.

[0025] The waste fluid tank 80 and the playback tank 75 are formed in the central upper part within the sheathing case 41, and the waste fluid injection tubing 42 is formed above the waste fluid tank 80. The inside of the waste fluid tank 80 is enclosed with the insulating walls 2 and 19, and this enclosed interior has become the playback tank 75. The waste fluid 11 thrown in in the waste fluid tank 80 from the waste fluid injection tubing 42 infiltrates into the insulating wall 2 and the playback tank 75 between 19.

[0026] the inside (the playback tank 75 is included) of the waste fluid tank 80 -- the impression electrodes (electrode plate) 30a and 30b -- each -- level or abbreviation -- although it is installed horizontally and shown in drawing 1 , the electrode plates 30a and 30b are connected to the high-voltage power source 7 through voltage overloads 7a and 7b which are mutually different so that the seal of approval of the respectively separate electrical potential difference can be carried out (refer to drawing 7). Therefore, the waste fluid 11 which permeated into the playback tank 75 is impressed with the impression electrodes 30a and 30b, and is divided into the ink pigment 88, regenerant 62, and water 9.

[0027] The regenerant tank 70 is adjoined and formed in the side of the playback tank 75, and is open for free passage with the playback tank 75 through the regenerant recovery tubing 72. Therefore, the regenerant 62 separated within the playback tank 75 is collected from the playback tank 75 by the regenerant tank 70 through the regenerant recovery tubing 72. In addition, piping 123 is connected to the pars basilaris ossis occipitalis of the regenerant tank 70, and the closing motion valve 127 is formed in the entry of piping 123. Although this closing motion valve 127 is always closed, when discharging the regenerant 62 collected in the regenerant tank 70, it is opened wide.

[0028] on the other hand -- water recovery -- service water -- the reclaimed water 9 which the tub 90 is formed in the lower part of the playback tank 75, and was separated within the playback tank 75 -- this water recovery -- service water -- it falls to a tub 90. Moreover, it connects with the tank 90 for water recovery so that the ground electrode 8 may energize with the water in a tank 90. Therefore, reclaimed water 9 the very thing which fell in the tank 90 serves as a ground lateral electrode, and it dissociates between the front face of reclaimed water 9, and waste fluid 11, and an ink pigment serves as the ink pigment film 88, and adheres.

[0029] A tank 90 is formed caudad, the recycled water tank 91 is open for free passage through the lower part and the recovery tubing 93 of a tank 90, and the reclaimed water 9 in a tank 90 is collected in the recycled water tank 91 through the recovery tubing 93. Piping 123 is connected to the pars basilaris ossis occipitalis of the recycled water tank 91, and the closing motion valve 122 is formed in the entry of piping 123. Although this closing motion valve 122 is always closed, when discharging the reclaimed water 9 collected in the recycled water tank 91, it is opened wide.

[0030] Moreover, the filtration tank 101 is caudad formed through the closing motion valve 92 rather than the pars basilaris ossis occipitalis of a tank 90, and the closing motion drive of the closing motion valve 92 is carried out by the closing motion drive motor 94. The closing motion valve 92 is formed. This closing motion valve 92 is used in order to open and close a tank 90, and it is always closed. The barrier filter 100 is arranged by the horizontal or the abbreviation horizontal in the filtration tank 101. This filter 100 is for collecting ink pigments,

and water 9 and waste fluid 11 are collected through this filter 100 by the lower part in a tank 101. Piping 120 is connected to the lower part of the filtration tank 101, and the closing motion valve 121 is infixed in the entry of piping 120.
[0031] In addition, the oil-level detection sensor is formed in each tank, respectively, and overflow and a level fall can be prevented now. That is, in the waste fluid tank 80, the waste fluid level sensor 110 which detects the top face of waste fluid 11 is formed, and the water interface detection sensor 111,112 which detects the interface of waste fluid 11 and reclaimed water 9 is formed in the tank 90. Moreover, in the playback tank 75, the detection sensor 113 which detects regenerant 62 is formed, and the sensor 114 which detects recycled water 9 is formed in the recycled water tank 91.
[0032] Moreover, the piping 123 connected to the regenerant tank 70 and the recycled water tank 91 has branched for the piping 124,126 of two, and the closing motion valve 128,125 is infixed near the tee of each piping 124,126. The closing motion valve 128 is for sending regenerant 62 and water 9 to a blanket washing station. In addition, piping 120,123,124,126 functions as return passage which returns regenerant 62, reclaimed water 9, and waste fluid 11 to the waste fluid tank 80. Since the waste fluid regenerative apparatus of the printing machine concerning the 1st operation gestalt of this invention is constituted as mentioned above, the waste fluid 11 fed into the waste fluid tank 80 infiltrates into the playback tank 75 between the insulating walls 19, and this waste fluid 11 is impressed with the impression electrodes 30a and 30b in the playback tank 75, and is divided into the ink pigment 88, regenerant 62, and water 9.
[0033] The separated regenerant 62 is collected from the playback tank 75 by the regenerant tank 70 through the regenerant recovery tubing 72. the ink pigment 88 and water 9 which were separated on the other hand -- water recovery of the lower part of the playback tank 75 -- service water -- the water 9 which fell in the tub 90 and fell in the tank 90 serves as a ground lateral electrode, and it dissociates between the front face of water 9, and waste fluid 11, and an ink pigment serves as the ink pigment film 88, and adheres.
[0034] The reclaimed water 9 which fell in the tank 90 is collected by the water tank 91 through the recovery tubing 93. Thus, if waste fluid is reproduced, regenerant 62 and water 9 which were separated from the condition shown in drawing 1 at the time of playback initiation with the passage of time are stored in each tank 70 and 91, and the ink pigment film 88 also becomes thick at coincidence. And after predetermined time, the ink pigment film 88 goes up to near the impression electrode 30a like the condition which shows by drawing 2 .
[0035] When the ink pigment film 88 goes up further, it is necessary for the ink pigment film 88 to stop playback, for example after the workload termination (from playback initiation to or after predetermined time progress) on the 1st, since fear of a short circuit occurs in contact with impression electrode 30a, and to discard the ink pigment 88. Collecting-in regenerant [which was reproduced and was stored in the regenerant tank 70 on the other hand] 62, and water tank 91 water 9 opens each closing motion valve 127,122 and the closing motion valve 128 wide, is sent to a blanket washing station (illustration abbreviation), and is used for washing of a blanket. After that, it is collected as waste fluid 11 again, and it is sent in the waste fluid tank 80, and is recycled.
[0036] In addition, independent use of regenerant 62 or the water 9 may be carried out only by either here. What is necessary is to open only a then required bulb. what is necessary is to see to use it and just to open Above-mentioned abandonment of the ink pigment 88 can be performed as follows. That is, if the ink pigment 88 is separated to the condition of drawing 2 , the ink pigments 88 will be collected in the filtration tank 101.
[0037] That is, the ink pigment film 88 divided into the front face of the water 9 in a tank 90 and water 9, and the waste fluid 11 and regenerant 62 in the playback tank 75 fall on the filtration tank 101 by which the tank 90 was formed caudad by opening the closing motion valve 92 prepared in the lower part of a tank 90. [the waste fluid 11 in the waste fluid tank 80, and] Thus, in order to discharge the ink pigment film 88 rapidly with waste fluid 11, regenerant 62, and water 9, it will fall to coincidence according to a stream also with the ink pigment 88 with high viscosity.
[0038] Since the barrier filter 100 is infixed into the filtration tank 101 at this time, as shown in drawing 3 , uptake of the ink pigment 88 which fell in the filtration tank 101 is carried out to a filter 100, and other water 9, waste fluid 11, and regenerant 62 are stored by the lower part in the filtration tank 101. By doing in this way, as shown in drawing 3 , the waste fluid tank 80, the playback tank 75, and a tank 90 will be in an empty condition. However, regenerant 62 is stored in the regenerant tank 70, and water 9 is stored also in the water tank 91.
[0039] And although stored in the filtration tank 101 as waste fluid 11 with which the water 9 which fell, waste fluid 11, and regenerant 62 became muddy, this waste fluid 11 is reproduced again. Moreover, the ink pigment 88 by which uptake was carried out to the filter 100 is used to predetermined filter uptake capacity, performing several same recovery, takes out and carries out the cast away to the exterior after that, and is exchanged for a new filter.
[0040] Thus, if an ink pigment is discharged, the restart of the waste fluid regenerative apparatus will be carried out as follows from the condition of drawing 3 after that. First, the water 9 currently stored in the regenerant 62 currently stored by the playback tank 75 and the waste fluid tank 80 in the regenerant tank 70 and a water tank 91 is supplied. At this time, it supplies by opening the closing motion valve 122,127 of each tanks 70 and 91, and the closing motion valve 125 of piping (supply pipe) 126.
[0041] The water 9 to waste fluid 11 and the playback tanks 80 and 75 and supply of regenerant 62 are carried out to to the condition (condition on which even the impression electrodes 30a and 30b collected) which can be impressed to an electrode. From this condition, the inside of the playback tank 75 is not dirty in the playback tank 75 only for beautiful water 9 and regenerant 62. After this, the waste fluid 11 currently stored in the filtration tank 101 is reproduced. After being impressed by Electrodes 30a and 30b at this, the closing motion valve 121 of the filtration tank 101 is opened, and it supplies in the waste fluid tank 80 from the waste fluid injection tubing 42 through tubing 120.
[0042] In this way, if waste fluid 11 is supplied, it can come, simultaneously this waste fluid 11 will be divided into the ink pigment 88, regenerant 62, and water 9, and the operation and process mentioned above will be reproduced. And if all the waste fluid in the filtration tank 101 is supplied, the waste fluid after blanket washing is supplied like original, and it reproduces.
[0043] By repeating the same process as the above hereafter, the washing waste fluid 11 is divided into regenerant 62, water 9, and the ink pigment 88, the ink pigment 88 is collected and discarded with a filter 100, and water 9 and regenerant 62 are reused. without prepare a ground electrode in the interior of a container according to the waste fluid regenerative apparatus and the waste fluid playback approach of a printing machine of this operation gestalt , use the conductivity of water in this way , in the system in which three components of the ink pigment 88 , the insulating penetrant remover 62 , and conductive water 9 be intermingled , single equipment can separate these three components and , moreover , such separation can be perform comparatively efficiently in a short time . Moreover, recovery removal of the ink pigment 88 and reuse of water 9 and regenerant 62 can also be performed easily and smoothly, and its practicality improves greatly.
[0044] next, water recovery of the waste fluid regenerative apparatus of the printing machine which drawing 52 will require for the 2nd operation gestalt of this invention if the 2nd operation gestalt of this invention is explained -- service water -- it is drawing showing a tub and (a) is the top view and the typical sectional view which looked at (b) from [the] the side face. this operation gestalt -- water recovery -

- service water -- the description is in a tub 90 and other parts are constituted like the 1st operation gestalt. That is, in this invention, the most important point is considering as the configuration which can discard the separated ink pigment 88 outside. For that purpose, to fall finely smoothly is required without the ink pigment film 88 divided into the front face of water 9 within a tank 90 adhering to tank 90 inside. then -- this operation gestalt -- water recovery -- service water -- the tub 90 was constituted as follows.

[0045] it is shown in drawing 5 -- as -- water recovery -- service water -- a tub 90 is formed in a funnel-like configuration and antifouling processing 16 is performed to the inside of the body 15 of a tank. Resin treatment of PTFE etc. is sufficient as this antifouling processing, and the method using a tile, earthenware, etc. may be used for it. Since the waste fluid regenerative apparatus of the printing machine concerning the 2nd operation gestalt of this invention is constituted as mentioned above, the ink pigment film 88 separated on the surface of water in a tank 90 is smoothly discharged from the exhaust port 89 of tank 90 lower limit with water 9 grade. Therefore, the separated ink pigment 88 can be certainly discarded now outside.

[0046] As mentioned above, although the operation gestalt of this invention was explained, this invention is not limited to this operation gestalt, in the range which does not deviate from the meaning of this invention, can deform variously and can be carried out. For example, a large number installation of the metal-electrode plates 30a and 30b may be carried out more into a container. Moreover, the metal-electrode plates 30a and 30b are not limited in the shape of a wire gauze just possible [circulation of waste fluid].

[0047]

[Effect of the Invention] As explained in full detail above, according to the waste fluid regenerative apparatus (claim 1) and the waste fluid playback approach (claim 7) of a printing machine of this invention In the system in which three components of an ink pigment, an insulating penetrant remover (regenerant), and conductive reclaimed water were intermingled Single equipment being able to separate these three components, being able to perform such separation efficiently comparatively moreover in a short time, and practicality improving upwards greatly, and using the conductivity of water Since the above-mentioned separation can be performed without preparing a ground electrode in the interior of a container, the practicality of waste fluid playback can be raised.

[0048] If the closing motion valve which drops the ink pigment stored in the reclaimed water front face in this container for water recycling in this filtration container with this reclaimed water, this waste fluid, and this regenerant is infixed between this container for water recycling, and this filtration container, ink pigments can be easily collected using the stream by gravity (claim 2). By preparing the return passage of this regenerant of the above-mentioned regenerant reservoir container, this recycled water reservoir container, and this filtration container collected with one of containers at least, this reclaimed water, and this waste fluid which returns either to this waste fluid reservoir container at least, this regenerant (playback penetrant remover), this reclaimed water, and this waste fluid can be easily reused now, a penetrant remover can be saved, and the time and effort of reuse can be saved now (claim 3).

[0049] Forming this container for water recycling in the shape of a funnel (claim 4) and this container for water recycling can collect now the ink pigments from this container for water recycling to this filtration container easily by performing antifouling processing which prevents adhesion of this ink pigment inside (claim 5). A penetrant remover can be saved now by reusing the above-mentioned regenerant and the reclaimed water which were separated (claim 8).

[Translation done.]